



**ROBERT MUGABE SCHOOL OF EDUCATION AND
CULTURE**

DEPARTMENT OF CURRICULUM STUDIES

**BACHELOR OF EDUCATION SECONDARY IN-SERVICE
HONOURS DEGREE SCIENCE AND TECHNOLOGY
EDUCATION.**

LEVEL 1 SEMESTER 2

EXAMINATION QUESTION PAPER

MODULE CODE

TDSL121

MODULE NARRATION

Genetics and Evolution

DATE

November 2024

DURATION

3 HOURS

GREAT ZIMBABWE UNIVERSITY
RECEIVED
-- OCT 2024
EXAMINATIONS OFFICE

INSTRUCTIONS TO CANDIDATES:

- 1. Answer any THREE questions at least a question from each section.**
- 2 All questions carry equal marks**

SECTION A: GENETICS

- 1 a) A sex linked gene in humans' causes the bleeding disease, hemophilia h.
- i) If a hemophiliac male mates with a homozygous non-hemophiliac female what proportion of their offspring will be hemophiliac among the two sexes? (5)
 - ii) If a daughter produced by the mating in (i) above mates with a normal male, what proportion of their offspring will be hemophiliac? (5)
- b) How do independent assortment, crossing over and random fertilization contribute to genetic variation in sexually reproducing organisms (15)
- 2 a) Compare the structure of DNA and RNA (15)
- b) The replication of DNA is semi-conservative. Discuss (10)
3. Give a description of how proteins are synthesized in the living cells. (25)

SECTION B: EVOLUTION

4. (a) Charles Darwin put forward a theory of evolution, examine it. (20)
- (b) Critique Lamarckism's theory of evolution. (5)
5. Explain the evidence supporting the occurrence of evolution. (25)

END OF EXAMINATION